The competition for the best camera phone is led by Huawei with its latest flagship product, the P30 Pro. Huawei has been in this position before, as its P9 model was among the first to switch to dual cameras on the back. The module in the P30 Pro that integrates a CMOS Image Sensor (CIS) from Sony, which uses Exmor-RS Technology, has now an 8.2M pixel resolution telephoto camera offering x5 optical zoom and x50 digital zoom.

The Huawei P30 Pro Periscope Camera is integrated in a quad camera solution in the rear face of the phone. The quad camera solution includes a main camera, a wide-angle camera and a folded optic periscope for the telephoto camera function, combined with a Time-of-Flight (ToF) camera. This configuration produces better photo quality.

The P30 Pro telephoto camera module has dimensions of 29mm x 17.8mm x 5.85mm. It is equipped with a Sony CIS, a Sunny optical 5-element lens and prism, and a TDK autofocus (AF) and optical image stabilization (OIS) component.

This is the first camera that integrates a prism in the optical part. Thanks to the prism, the CIS receives light at 90° compared to the direction of the photo taken.

This gives more space for the optical module to move compared to standard telephoto camera module.

The report includes a complete technology and cost analysis of the Huawei P30 Pro folded optic periscope camera module that includes the CIS die, the lens module, the prism, the voice coil motor (VCM) and the housing. Also, comparisons with the Huawei P20 Pro telephoto camera are provided. These comparisons highlight structures, technical choices and manufacturing cost.
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**AUTHORS**

*Audrey Lahrach* is in charge of costing analyses for IC, LCD & OLED Displays and Sensor Devices. She holds a Master degree in Microelectronics from the University of Nantes.

*Guillaume Chevalier* has joined System Plus Consulting in early 2018 to perform physical analyses. He holds a two-year university degree in technology of physical measurements and instrumentation technics.

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